compute number of moles in a molar mas

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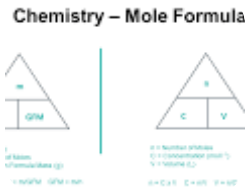
AI Overview

To compute the number of moles in a sample, **divide the given mass of the substance (in grams) by its molar mass** (in grams per mole). By definition, exactly one mole of a substance has a mass equal to its molar mass, meaning the ratio equals 1 mole.



The Formula

- $n = \frac{m}{M}$
- n = number of moles (mol)
- m = mass of the sample in grams (g)
- M = molar mass in grams per mole (g/mol)

Steps to Calculate

- **Find sample mass**: Measure or look up the weight of your substance in grams (m).
- **Find molar mass**: Add the atomic weights of each atom from the Periodic Table to get grams per mole (M).
- **Divide**: Put the mass (m) on top and divide by the molar mass (M).

If you have a **specific chemical formula** and a **sample weight in grams**, tell me what they are and I can compute the exact number of moles for you.

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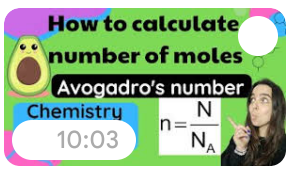

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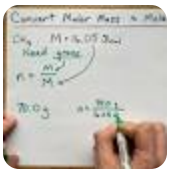

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Calculating molar mass and number of moles (worked ...

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6:12

Calculating molar mass (molecular weight) and the number of ...

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To **calculate moles** from **mass** and **molecular** weight, use the **formula**: **number of moles** = **mass** / **molecular** weight.

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Wikipedia
https://en.wikipedia.org › wiki › Mole_(unit)

Mole (unit)

One **mole** is an aggregate of exactly 6.02214076×1023 elementary … corresponds to the **number** of atoms in 12 grams of 12C, [1] which made the **molar mass** of a ...

Omni Calculator
https://www.omnicalculator.com › chemistry › mole

Mole Calculator

To calculate the number of moles of a. **Divide the weight by the atomic or molecular mass**. There are 6.02214076×1023 atoms in a mole.

Chemistry LibreTexts
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2.9: Determining the Mass, Moles, and Number of Particles

Jun 18, 2019 — The **number of moles** in a system can be determined using the atomic **mass** of an element, which can be found on the periodic table. Read more

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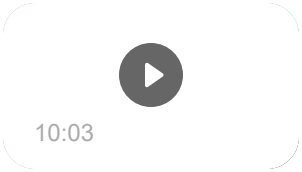

Using avogadro's constant to calculate the number of moles OR the number of particles, compounds or atoms. Stoichiometry for grade 10-12.

5 key moments in this video

Questions and answers

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RSC Education
https://edu.rsc.org › infographics › 4015494.article

Calculating moles and using Avogadro's number

Using molar mass, however, **amount** of substance = mass / molar mass or, in quantity symbols (italicized), n = m / M It follows: mol = g / (g/mol) Molar mass is ...

Giroscience
https://www.giroscience.com › molar-mass-complete-ca...

Molar Mass: Complete Calculation Guide

Mar 3, 2026 — Convert **mass** to **moles** by dividing the **mass** in grams by the **molar mass** in g/**mol**. The **formula** is: **Moles** = **Mass** (g) ÷ **Molar Mass** (g/**mol**).

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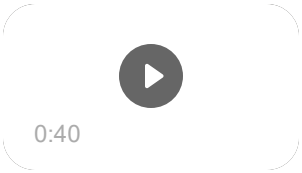

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Molar mass

n(X) = N(X)/NA = N(X) · M(X) = ma(X) · NA = ma(X)/n ... Read more

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